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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AWAD, AMR A

ART UNIT PAPER NUMBER

2675

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/722,996

Applicant(s)

SUN, JIMING

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 5-8, 10-11, 13-19, 21-22, 24-25, 27-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US Patent NO. 5,832,296, hereinafter referred to as Wang) in view of Liao et al. (US patent NO. 6,570,556; hereinafter referred to as Liao).

As to independent claim 1, Wang (figure 1) teaches a pointing device (10) which includes a ring (12), a sensor unit comprising a sensor (16) in substantially circular pattern and mounted on the ring, and wherein the sensor unit is adapted to create position information (col. 4, lines 21-38). The sensor is adapted to control a pointer on a display screen (col. 7, lines 6-18), and a controller (processor 42) for creating a position based on activation of the sensor (col. 5, lines 25-35).

Wang does not expressly teach that the sensor unit (16) comprises a plurality of sensors, and wherein each sensor can be activated for positioning the pointer on the display screen.

However, Liao teaches a pointing device to control a pointer on a display that includes a plurality of sensors (422) in a substantially circular pattern to activate

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positioning the pointer on the display screen (figures 4 and col. 2, line 57 through col. 3, line 14).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the sensors taught by Liao to replace the sensor (16) of Wang's device so as motivated by Liao, to increase the conductivity of the pointing device (col. 1, lines 54-57), as well as to provide an accurate movement of the cursor by providing a plurality of sensors.

As to claim 2, as can be seen in figure 2, the ring (12) is a size that is capable of being worn by a human digit.

As to claim 5, as can be seen in figure 2, Wang shows that the pointing device is capable of being operated by human thumb.

As to claim 6, as can be seen in figure 3, Wang shows a controller (processor 42) mounted to the ring wherein the controller is coupled to the sensor (14, 16, 18 and 20), a transmitter (48) coupled to the controller to translate the signal to movement information (col. 5, lines 18-50).

As to claim 7, Wang teaches that the pointing device (12) can be used as a mouse (abstract), which inherently means that the device control a pointer on a display. As to claim 8, Wang teaches that the pointing device (12) includes, a pressure sensor (14) (col. 4, lines 23-26).

As to claims 10-11, Wang shows that the sensors are pressure sensors, which may be either inductance or capacitance.

As to claims 13-19, 21-22, 24-25, 27-28 and 30, the claims are similar to claims

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1-2, 5-8 and 10-1 1, and would be analyzed as previously discussed with respect to these claims.

3. Claims 3-4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang and Liao in view of Eng et al. (US patent NO. 5,638,092 hereinafter referred to as Eng).

As can be seen above, Wang teaches all the limitations of claims 3-4 and 20 except the citations of having selection button mounted on the ring and wherein the selection button is capable of being operated by a human thumb.

However, Eng (figure 1) teaches a pointing device (101) that include a selection button (120) which can be operated by the user's thumb (col. 3, line 46 through col. 4, line 9).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Eng having a selecting switch mounted on the ring to be incorporated to Wang's device so as to be able to easily use the device as an input device (mouse), which make the device user friendly, as well as to increase the versatility of the device.

4. Claims 9, 12, 23, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang and Liao in view of Russell (US patent NO. 5,481,265).

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As to claims 9 and 23, Wang does not teach that the plurality of sensors are rocker switches (note that Eng teaches that a touch sensitive pad is preferred to a mechanical switch because of the force required to activate or deactivate a mechanical switch can cause unwanted finger motion (col. 5, lines 30-33) which clearly suggests that a mechanical switches can be used.

However, Russell (figures 1A, 1B and 7B) teaches a user interface (10) that can be worn in the user's finger, and wherein the device includes a plurality of mechanical switches (1a, 1b, 1c and 1d) (col. 1, lines 7-27, and 51-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Russell having mechanical switches to replace Wang's touch switches, because as described above by Eng, mechanical switches may be used, which make such choice purely designed choice based on the environment and the way in which the device operated.

As to claims 12, 26 and 29, Wang does not expressly teach using infrared to transmit the information.

However, Russell teaches a pointing device which uses infrared to transmit the information to the computer device (col. 6, lines 41-44).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Russell using an infrared transmitter to be used in Wang's transmitter because infrared technology is known for its reliability and efficiency. Furthermore, Russell teaches that transmitter can be any of

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the known technologies (infrared, radio and acoustic). Therefore, using any of these methods is also based on the designer choice.

Response to Arguments

5. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703)305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.A

AMR A. AWAD
PRIMARY EXAMINER

